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Loris Stola

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EXAMINER

SARWAR, BABAR

ART UNIT

PAPER NUMBER

2617

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,370	<b>Applicant(s)</b> STOLA ET AL.	
	<b>Examiner</b> BABAR SARWAR	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 26-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-50 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                            | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: **Para 0038** of the specification mentions achieving the aim of the claimed invention defined in **claims 1, 24, and 25** which are cancelled claims.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 26** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 26** recites the limitation “cell coverage” in line 5. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

The examiner takes note that the applicant probably intended the claim language “the cell coverage”. For the purpose of examination, the examiner will assume the applicant meant to say “the cell coverage”.

**Claim 26** recites the limitation “the environment” in line 8. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

The examiner takes note that the applicant probably intended the claim language “an environment”. For the purpose of examination, the examiner will assume the applicant meant to say “an environment”.

**Claim 26** recites the limitation “a region around” in line 6. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

**Claim 26** recites the limitation “within first areas” in line 8. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

**Claim 26** recites the limitation “the coverage” in line 13. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

The examiner takes note that the applicant probably intended the claim language “the cell coverage”. For the purpose of examination, the examiner will assume the applicant meant to say “the cell coverage”.

3. **Claims 1-25** have been cancelled as per **preliminary** amendments.
4. **Claims 26-50** are newly added claims.
5. **Claims 26-50** are currently pending.

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 26-30, 44-50** are rejected under 35 U.S.C. 102(b) as being anticipated by Bernardin et al. (US 6,173,185 B1), hereinafter referenced as Bernard.

Consider **claim 26**, Bernard discloses a method for planning a radio communications network (**Abstract, where Bernard discloses determining the boundaries of cells and the associated reliability of the RF coverage within these boundaries**). Bernard discloses that computing cell coverage, to indicate a region around a radio base station where a radio electric signal radiating out from the radio base station copes with given requirements (**Abstract, where Bernard discloses the cell coverage reliability**); wherein computing cell coverage comprises: dividing a region around said radio base station into a number of first areas (**Figs. 1a, 1b, where Bernard discloses first areas i.e. cell edge**); for each first area, computing a first quantity indicative of the coverage within the first area as a function of data describing the environment within first areas along a propagation path of a radio electric signal radiating out from said radio base station and passing through said first area (**Fig. 1b, where Bernard discloses reliability values computed by propagation method**); dividing at least some of said first areas into a number of second areas; and for at least some of said second areas, computing respective second quantities indicative of the coverage within said second areas (**Fig. 1b, where Bernard discloses areas within cell edge with greater reliability**), each second quantity being computed for the respective second area as a function of at least the first quantity computed for the first area containing said second area and of data describing the environment within said

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second area and within at least some further second areas within said first area and arranged upstream said second area along a radio electric signal propagation path passing through said second area (**Col. 4:24-26, where Bernard discloses fade margin, Col. 4:51-52, where Bernard discloses that the fading margin included in the measurements, Col. 4:58-63, where Bernard discloses that the cell reliability is based on received points within large area i.e. cell radius**).

Consider **claim 27**, Bernard discloses everything claimed as implemented above (see claim 26). In addition, Bernard discloses that wherein each second quantity is computed for the respective second area also as a function of data describing the environment within some further second areas arranged just outside the first area containing said second area and upstream said second area along said radio electric signal propagation path (**Fig. 1b, where Bernard discloses fade margins and area reliability**).

Consider **claim 28**, Bernard discloses everything claimed as implemented above (see claim 26). In addition, Bernard discloses that wherein each second quantity is computed for the respective second area also as a function of the first quantities computed for first areas surrounding the first area containing said second area (**Fig. 1b, where Bernard discloses cell coverage area reliability**).

Consider **claim 29**, Bernard discloses everything claimed as implemented above (see claim 28). In addition, Bernard discloses that wherein in the computation of a second quantity for a respective second area, the first quantities computed for the first areas surrounding the first area containing said second area are each weighted by

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using a respective weight which is inversely proportional to the distance between said second area and the corresponding first area (**Col. 4:24-26, where Bernard discloses fade margin**).

Consider **claim 30**, Bernard discloses everything claimed as implemented above (see claim 26). In addition, Bernard discloses that wherein said second quantities are computed for second areas empty of buildings (**Col. 1: 62-67**).

Consider **claim 44**, Bernard discloses everything claimed as implemented above (see claim 26). In addition, Bernard discloses that wherein said data describing the environment within a first area include ground altitude with respect to the sea level, average building height, percentage of the first area occupied by buildings, and vegetation typology (**Fig. 4, where Bernard discloses geographical view of cell radius**).

Consider **claim 45**, Bernard discloses everything claimed as implemented above (see claim 26). In addition, Bernard discloses that wherein said data describing the environment within a second area include ground altitude with respect to the sea level and building height with respect to the ground level (**Fig. 4, where Bernard discloses fade margin and thresholds**).

Consider **claim 46**, Bernard discloses everything claimed as implemented above (see claim 26). In addition, Bernard discloses that wherein a second quantity for a second area occupied by a building is computed as a function of second quantities computed for second areas surrounding the second area occupied by the building (**Col.**

**4:51-52, where Bernard discloses that the fading margin included in the measurements).**

Consider **claim 47**, Bernard discloses everything claimed as implemented above (see claim 46). In addition, Bernard discloses that wherein a second quantity for a second area occupied by a building is computed as a weighted average of second quantities computed for second areas surrounding the second area occupied by the building (**Fig. 1b, where Bernard discloses cell coverage area reliability**).

Consider **claim 48**, Bernard discloses everything claimed as implemented above (see claim 47). In addition, Bernard discloses that wherein said second quantities computed for second areas surrounding the second area occupied by the building are weighted by using respective weights which are inversely proportional to the squared distances between the second area occupied by the building and the second areas surrounding the second area occupied by the building (**Col. 4:24-26, where Bernard discloses fade margin**).

Consider **claims 49**, Bernard discloses everything claimed as implemented above (see claim 26). In addition, Bernard discloses that wherein a processing system capable of being programmed to implement the method according to claim 26 (**Fig. 5, where Bernard discloses computer system to implement the method**).

**Claim 50**, as analyzed with respect to the limitations as discussed in claim 49.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 31-43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bernard in view of Olofsson (US 6,047,238), hereinafter referenced as Olof.

Consider **claim 31**, Bernard discloses everything claimed as implemented above (see claim 26). Bernard does not explicitly disclose that wherein computing a second quantity for a respective second area comprises: arranging a number of virtual radio electric signal sources outside the first area containing said second area; and computing said second quantity as a function of the point strength of a radio electric signal radiating out from at least one of said virtual radio electric signal sources and having a propagation path passing through said second area.

Olof discloses that wherein computing a second quantity for a respective second area comprises: arranging a number of virtual radio electric signal sources outside the first area containing said second area (**Fig. 1, where Olof discloses generation of multiple of path profiles**); and computing said second quantity as a function of the point strength of a radio electric signal radiating out from at least one of said virtual radio electric signal sources and having a propagation path passing through said second area (**Abstract, Fig. 5, where Olof discloses method of generating primary and adjacent paths and comparing them and outputting resulting path profile**). Therefore it would have been obvious to one of ordinary skills in the art at the time the invention was made to modify Bernard with the teachings of Olof so as to improve the topographical data as discussed on **Col. 1:40-41**.

Consider **claim 32**, the combination teaches everything claimed as implemented above (see claim 31). In addition, Olof discloses that wherein the propagation path of the radio electric signal radiating out from said virtual radio electric signal source is the prolongation of a theoretical line linking said radio base station and said virtual radio electric signal source (**Fig. 1, where Olof discloses primary paths and adjacent paths**).

Consider **claim 33**, the combination teaches everything claimed as implemented above (see claim 31). In addition, Olof discloses that wherein said virtual radio electric signal sources are arranged side by side along a line (**Fig. 1, where Olof discloses primary paths and adjacent paths arranged side by side**).

Consider **claim 34**, the combination teaches everything claimed as implemented above (see claim 33). In addition, Olof discloses that wherein said virtual radio electric signal sources are equispatially arranged side by side along said line (**Fig. 1, where Olof discloses primary paths and adjacent paths arranged side by side**).

Consider **claim 35**, the combination teaches everything claimed as implemented above (see claim 33). In addition, Olof discloses that wherein said second areas have a polygonal shape, and wherein the distance between two adjacent virtual radio electric signal sources along said line is correlated to a side of said second areas (**Fig. 4, where Olof discloses primary and secondary paths and adjacent obstructions**).

Consider **claim 36**, the combination teaches everything claimed as implemented above (see claim 33). In addition, Olof discloses that wherein said line is a curved line (**Fig. 4**).

Consider **claim 37**, the combination teaches everything claimed as implemented above (see claim 36). In addition, Olof discloses that wherein said curved line is a circumference arc having center in said radio base station (**Fig. 4**).

Consider **claim 38**, the combination teaches everything claimed as implemented above (see claim 37). In addition, Olof discloses that wherein said circumference arc has radius equal to the difference between the distance between said radio base station and the center of the first area containing said second area and the distance between the center of said first area and said circumference arc (**Fig. 4**).

Consider **claim 39**, the combination teaches everything claimed as implemented above (see claim 38). In addition, Olof discloses that wherein said first areas have a square shape, and wherein the distance between the centers of said first area and said circumference arc is correlated to the diagonal of said first area (**Fig. 4**).

Consider **claim 40**, the combination teaches everything claimed as implemented above (see claim 37). In addition, Olof discloses that wherein ends of said circumference arc lie on theoretical lines which link said radio base station and corners of the first area containing said second area and which correspond to minimum and maximum azimuth angles of said first area with respect to said radio base station (**Fig. 4, where Olof discloses cell coverage**).

Consider **claim 41**, the combination teaches everything claimed as implemented above (see claim 31). In addition, Olof discloses that wherein the height of each virtual radio electric signal source is substantially equal to the sum of the ground altitude with respect to the sea level and the building height within the first area containing said

virtual radio electric signal source (**Fig. 4**).

Consider **claim 42**, the combination teaches everything claimed as implemented above (see claim 31). In addition, Olof discloses that wherein said virtual radio electric signal sources radiate a reference power (**Fig. 1, where Olof discloses generation of paths**).

Consider **claim 43**, the combination teaches everything claimed as implemented above (see claim 31). In addition, Olof discloses that wherein the power radiated by said virtual radio electric signal sources is uncorrelated with the power radiated by said radio base station (**Fig. 1**).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BABAR SARWAR whose telephone number is (571)270-5584. The examiner can normally be reached on MONDAY TO FRIDAY 09:00 A.M -05:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NICK CORSARO can be reached on (571)272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BS/

/BABAR SARWAR/  
Examiner, Art Unit 2617

/NICK CORSARO/

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